Acta Zootaxonomica Sinica, 36 (3): 586 – 589 (July 2011) ISSN 1000-0739
动物分类学报

THE GENUS *CULLADIA* MOORE (LEPIDOPTERA, CRAMBIDAE, CRAMBINAE) FROM CHINA, WITH DESCRIPTIONS OF ONE NEW SPECIES AND ONE NEWLY RECORDED SPECIES

LI Wei-Chun[1,2], LI Hou-Hun[1]*
1. *College of Life Sciences, Nankai University, Tianjin* 300071, *China*
2. *College of Agriculture, Jiangxi Agricultural University, Nanchang* 330045, *China*

Abstract Seven species of the genus *Culladia* are reported from China. Among them, *C. zhengi* sp. nov. is described as new and *C. dentilinealis* Hampson, 1919 is newly recorded from China. Images of adults and genitalia of the new species and the newly recorded species are provided, along with a checklist and a key to the Chinese species.
Key words Lepidoptera, Crambidae, Crambinae, *Culladia*, new species, new record, China.

The genus *Culladia* was established by Moore in 1886 to replace *Araxes* Walker, 1863 preoccupied by *Araxes* Stephens, 1834. Bleszynski (1970) revised the genus and recorded seventeen species. Schouten (1993) added one more species to the genus. To date, *Culladia* consists of eighteen species worldwide, in which five species are known from China prior to this study. This paper describes *C. zhengi* sp. nov. as new and reports *C. dentilinealis* Hampson, 1919 for the first time from China. A checklist and a key to all the known Chinese species are provided. All the studied specimens are deposited in the Insect Collection, College of Life Sciences, Nankai University (NKUM).

Culladia Moore, 1886

Culladia Moore, 1886: 382.
Type species: *Araxes admigratella* Walker, 1863.
Araxes Walker, 1863: 192 (A junior homonym of *Araxes* Stephens, 1834).
Type species: *Araxes admigratella* Walker, 1863.
Crambidion Mabille, 1899: 748.
Type species: *Crambidion achroellum* Mabille, 1899.
Nirmaladia Rose, 1983: 172.
Type species: *Culladia dentilinaelis* Hampson, 1919.

Diagnosis. This genus is close to *Pediasia* Hübner, 1825, but can be distinguished by the absence of R_3 in the forewing and the presence of the apical projection of phallus in the male genitalia. In *Pediasia*, the R_3 of forewing is present, and the phallus usually lacks the apical projection.

Distribution. The Oriental, African, Australian and Neotropical Regions.

Checklist of the Chinese species of *Culladia* Moore

Culladia evae Bleszynski, 1970

Culladia evae Bleszynski, 1970: 55, fig. 20. Type locality: Manila, Luzon, Philippines.

Distribution. China (Hainan); Indonesia, Philippines, New Guinea, Palau.

Culladia hastiferalis (Walker, 1865)

Scopula hastiferalis Walker, 1865: 1473. Type locality: Sarawak, Borneo, Malaysia.
Culladia admigratella Swinhoe (not Walker), 1900: 416.
Culladia hastiferalis (Walker): Bleszynski, 1970: 52, figs 9, 15.

Distribution. China (Taiwan, Hong Kong); Malaysia, Indonesia, Philippines, New Guinea.

Culladia hanna Bleszynski, 1970

Culladia hanna Bleszynski, 1970: 53, figs 16, 18. Type locality: Keravat, New Britain.

Distribution. China (Hainan); Indonesia, New Britain, New Guinea, St. Matthias Island, Solomon Island.

Culladia tonkinella Bleszynski, 1970

Culladia tonkinella Bleszynski, 1970: 53, figs 17, 19. Type locality: Hoa Binh, Tonkin.

Distribution. China (Hainan); Indonesia.

Culladia admigratella (Walker, 1863)

Araxes admigratella Walker, 1863: 192. Type locality: Sri Lanka.
Crambus inconspicuellus Snellen, 1872: 103, pl. 8 fig. 5.
Crambus troglodytellus Snellen, 1872: 103, pl. 8 fig. 6.
Culladia admigratella (Walker): Bleszynski, 1970: 50, figs 8, 12.

Distribution. China (Jiangsu, Zhejiang, Fujian, Guangdong, Hunan, Taiwan); Malaya, India, Sri Lanka.

Culladia dentilinealis Hampson, 1919

Culladia dentilinealis Hampson, 1919: 286. Type locality: Punjab, India.

Distribution. China (Yunnan); India, Nepal.

Culladia zhengi sp. nov.

Distribution. China (Guangxi, Hainan, Yunnan, Hong Kong).

This study was supported by the National Natural Science Foundation of China (J0930005).
* Corresponding author, E-mail: lihouhun@nankai.edu.cn
Received 7 June 2011, accepted 24 June 2011.

Key to the Chinese species of *Culladia* based on genitalia.

1. Female with ductus bursae conspicuously divided from corpus bursae 2
   Female with ductus bursae not conspicuously divided from corpus bursae 5
2. Ductus bursae much longer than corpus bursae 3
   Ductus bursae nearly as long as corpus bursae 4
3. Signum present; male sacculus absent ..... ***C. hastiferalis***
   Signum absent; male sacculus developed, with a long and curved spine ..... ***C. dentilinealis***
4. Ductus bursae sclerotized, signum absent ..... ***C. evae***
   Ductus bursae membranous, signum present ..... ***C. hanna***
5. Male with cornutus 6
   Male without cornutus ..... ***C. admigratella***
6. Par basalis short fingershaped, arising from basal two-sevenths of valva ..... ***C. tonkinella***
   Par basalis strong spinelike, arising from proximal base of valva ... ***C. zhengi* sp. nov.**

***Culladia zhengi* sp. nov.** (Figs 1, 3, 5)

Adult (Fig. 1). Forewing length 6.0 – 8.5 mm. Frons and vertex white. Labial palpus white, second segment mixed with pale brown on outer surface, third segment with median one third pale brown on outer surface. Maxillary palpus white. Antenna with dorsal surface pale brown and white alternately, ventral surface pale brown. Patagium and thorax white. Tegula white mixed with pale brown. Forewing suffused with pale brown scales, densely covered with blackish brown scales between one fourth and one half of dorsum, forming an ovate blotch; cell distally with two blackish brown spots near lower margin; white stripe arising from before three fifths of fold obliquely reaching apex; median line blackish brown, lined with white along inner side, acutely angled outwards at anterior one fourth, acutly angled inwards at posterior one third; subterminal line blackish brown, dentate, connected with median line at anterior one fourth, arched outwards at anterior one third; termen blackish brown; fringe pale brown, white basally except pale brown from anterior two fifths to three fifths. Hindwing white, covered with pale brown scales along veins; termen pale brown; fringe white, grey near base. Leg white; tibia and tarsus of foreleg pale brown on outer side, tarsi of mid- and hindlegs blackish brown and white alternately. Abdomen pale brown.

Male genitalia (Fig. 3). Uncus long and thin, curved downwards, pointed distally. Gnathos slightly longer than uncus, blunt apically. Valva long and narrow, apex bluntly rounded. Par basalis about one fourth length of valva, broad basally, tapering to pointed and slightly incurved tip, with a small dorsal spine medially. Juxta semicircular, protuberant at middle on posterior margin. Phallus about two thirds length of valva, curved at middle; cornuti double, long needlelike, with double apical projections: dorsal one long and thin, tapering to bluntly rounded tip, ventral one short and thick, thumb-shaped, bluntly rounded at tip, about half length of dorsal one.

Female genitalia (Fig. 5). Papilla anale large, broad, slightly longer than apophysis posterior. Apophysis anterior triangular, pointed distally. Lamella postvaginalis nearly ovate, with several rows of transverse pleats on posterior half. Ostium sclerotized marginally. Ductus bursae membranous, not conspicuously divided from corpus bursae, basal three fifths nearly as wide as lamella postvaginalis, distal two fifths slightly broadened; signum absent.

Holotype ♂, Damaoshan (34°03′N, 111°02′E; alt. 700 m), Hong Kong, 13 Apr. 2007, leg. LI Hou-Hun *et al.*, genitalia slide No. LWC08414. Paratypes: 7 ♂♂, 1 ♀, same date as holotype; 2 ♀♀, Kadoorie Farm and Botanic Garden (22°25′N, 114°10′E; alt. 210 m), 13 Apr. 2007, 20 Sep. 2009, leg. LI Hou-Hun *et al.*; 1 ♂, Pinglongshan (22°09′N, 107°58′E; alt. 510 m), Shangsi, Guangxi, 6 Apr. 2002, leg. HAO Shu-Lian and XUE Huai-Jun; 1 ♂, Jianfengling (18°42′N, 108°47′E; alt. 940 m), Hainan, 6 June 2007, leg. ZHANG Zhi-Wei and LI Wei-Chun; 1 ♂, 1 ♀, Wuzhishan (18°53′N, 109°41′E; alt. 640 – 650 m), Hainan, 15 – 21 May 2007, leg. ZHANG Zhi-Wei and LI Wei-Chun; 1 ♀, Diaoluoshan (18°47′N, 109°52′E; alt. 300 m), Hainan, 14 Aug. 2008, leg. HU Bing-Bing and ZHANG Li; 1 ♂, Ruili Rare Botanical Garden (24°N, 97°50′E; alt. 1 000 m), Yunnan, 6 Aug. 2005, leg. REN Ying-Dang.

Distribution. China (Guangxi, Hainan, Yunnan, Hong Kong).

Diagnosis. This species is similar to *Culladia hastiferalis* (Walker, 1865) in male genitalia, but can be distinguished by the par basalis with a small dorsal spine at middle, the phallus without tiny spinous cornutus in the male genitalia; the ductus bursae not conspicuously divided from the corpus bursae and the signum absent in the female genitalia. In *C. hastiferalis*, the par basalis lacks the small dorsal spine, the phallus has several tiny apical cornuti; the ductus bursae is conspicuously divided from the corpus bursae, and the corpus bursae has a stripelike signum.

Etymology. This species is named in honor of Professor ZHENG Zhe-Min for his outstanding contribution to the systematic entomology.

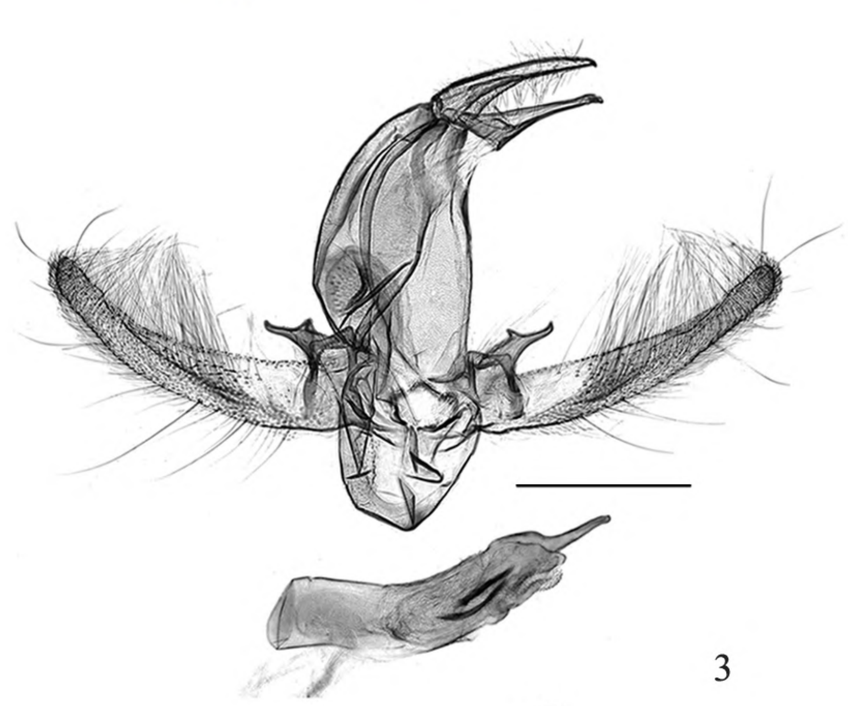
***Culladia dentilinealis* Hampson, 1919** (Figs 2, 4, 6)

Culladia dentilinealis Hampson, 1919: 286.

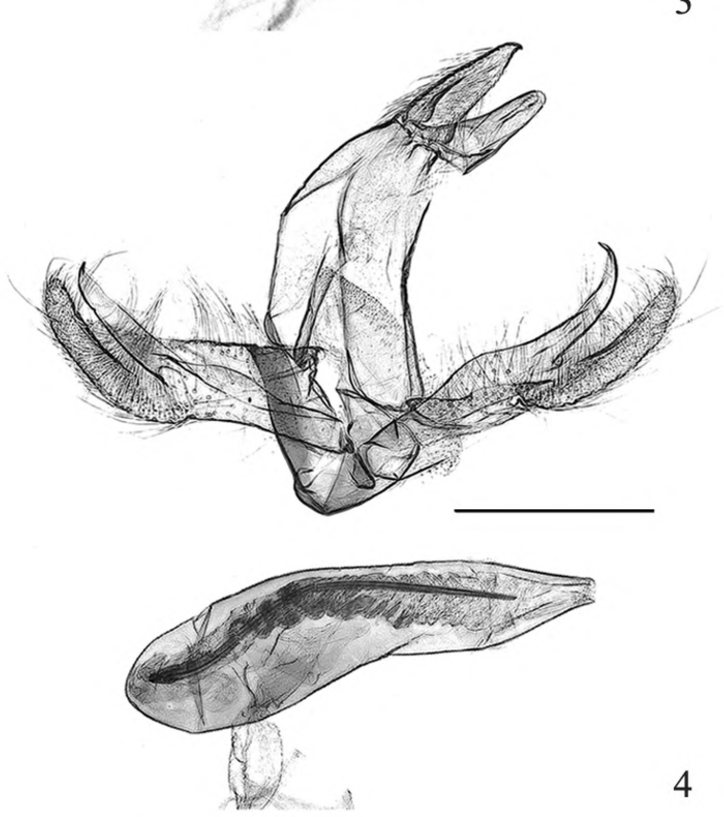
Adult (Fig. 2). Forewing length 5.5 – 7.5 mm. Frons and vertex yellowish white. Labial palpus with first and second segments yellowish white, basal half of second segment mixed with pale brown on outer surface; third segment white, basal two thirds mixed with pale brown on outer surface. Maxillary palpus pale brown. Antenna with dorsal surface pale brown and white alternately, ventral surface pale brown.

1

2

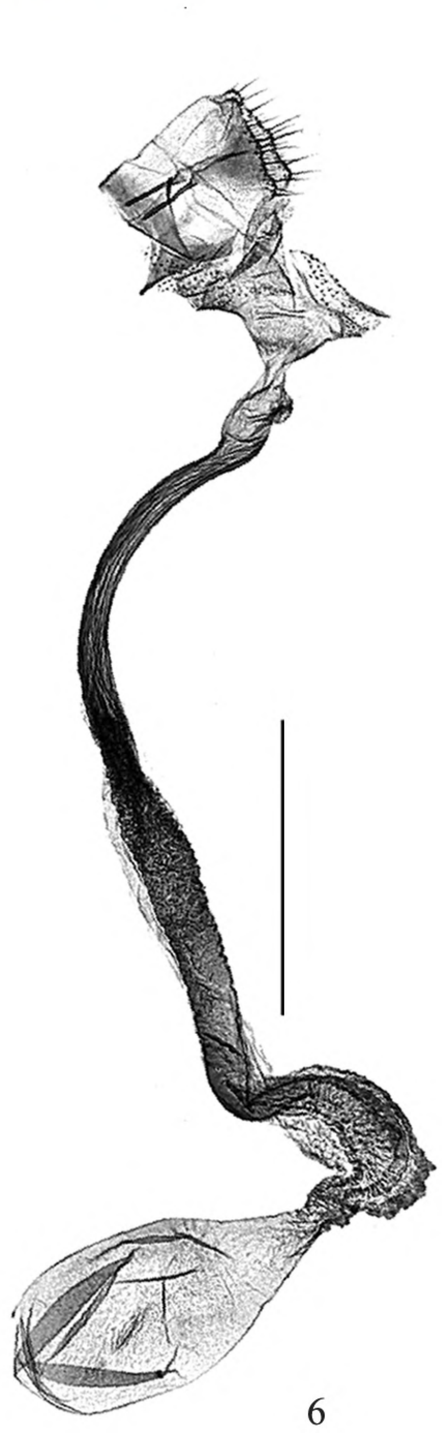


3



4

5



6

Figs 1 – 6. *Culladia* spp. 1, 3, 5. *Culladia zhengi* sp. nov. 2, 4, 6. *Culladia dentilinealis*. 1. Adult, female, paratype. 2. Adult, male. 3. Male genitalia, holotype (genitalia slide No. LWC08414). 4. Male genitalia (genitalia slide No. LWC08464). 5. Female genitalia, paratype (genitalia slide No. LWC08324). 6. Female genitalia (genitalia slide No. LWC08469). Scale bars = 0.5 mm.

Patagium, thorax and tegula white mixed with pale brown. Forewing densely covered with brown scales; median line white, acutely angled outwards at anterior two fifths; subterminal line white, dentate, arched outwards at about anterior one third; termen blackish brown; fringe pale brown, white medially. Hindwing grayish white, suffused with pale brown scales; fringe white, pale brown near base. Legs white; femur and tibia of foreleg blackish brown on outer side, tarsi of mid- and hindlegs blackish brown and white alternately. Abdomen pale brown.

Male genitalia (Fig. 4). Uncus broad basally, tapering towards pointed tip. Gnathos nearly as long as uncus, tip bluntly rounded. Valva long and narrow, apex bluntly rounded. Sacculus developed, distally with a long prong, pointed tip slightly reaching beyond apex of valva. Juxta not recognized in preparation. Phallus longer than valva, basally broad,

narrowed towards tip; cornuti composed of a long needle and a row of small spines.

Female genitalia (Fig. 6). Papilla anale equilaterally triangular, as long as apophysis posterior. Apophysis anterior narrowly triangular, pointed distally. Ductus bursae long and thin, sclerotized, about three times as long as corpus bursae, slightly swollen at base; basal half armed with longitudinal pleats, distal half slightly thickened, armed with transverse pleats. Corpus bursae ovate; signum absent.

Material examined. 21 ♂♂, 6 ♀♀, Ruili Rare Botanical Garden (24°N, 97°50′E; alt. 1 000 m), Yunnan, 5 – 8 Aug. 2005, leg. REN Ying-Dang; 1 ♂, 4 ♀♀, Menglun Tropical Botanical Garden (21°25′N, 101°13′E; alt. 570 m), Yunnan, 15 Aug. 2005, leg. REN Ying-Dang; 6 ♂♂, 3 ♀♀, Bubang (21° 29′ N, 101° 33′ E; alt. 650 m), Mengla, Yunnan, 23 – 24 Aug. 2005, leg. REN Ying-Dang.

Distribution. China (Yunnan); India, Nepal.

Remarks. This species is reported for the first time in China.

REFERENCES

Bleszynski, S. 1970. A revision of the genus *Culladia* Moore (Studies on the Crambinae, Lepidoptera, Pyralidae). *Tijdschrift voor Entomologie*, 113: 44 – 59.

Hampson, G. F. 1919. Descriptions of new Pyralidae of the subfamilies Crambinae and Siginae. *Annals and Magazine of Natural History, Including Zoology, Botany and Geology*, 4 (9): 53 – 68, 137 – 154, 305 – 326.

Mabille, P. 1899. Lepidoptera nova Malgassica et Africana. *Annales de la Société Entomologique de France*, 68: 723 – 753.

Moore, F. 1886. The Lepidoptera of Ceylon, London. 3: 305 – 392, pls. 172 – 195.

Rose, H. S. 1983. Description of a new genus *Nirmaladia* for the species *Culladia dentilinealis* Hampson (Lepidoptera: Crambinae). *The Journal of the Bombay Natural History Society*, 80 (1): 171 – 175.

Schouten, R. T. A. 1993. New species of the genera *Culladiella* Bleszynski and *Culladia* Bleszynski and description of the female of *Culladia troglodytella* (Snellen, 1872) (Pyraloidea: Crambidae: Crambinae). *Storkia*, 2 (1): 13 – 20.

Snellen, P. C. T. 1872. Bijdrage tot de Vlinder-fauna van Neder-Guinea. *Tijdschrift voor Entomologie*, 15: 1 – 110.

Swinhoe, C. 1900. Catalogue of Eastern and Australian Lepidoptera Heteocera in the Collection of the Oxford University Museum. Part Ⅱ. Ⅵ + 630 pp., 18 pls., Oxford.

Walker, F. 1863. List of the Specimens of Lepidopterous Insects in the Collection of the British Museum, 27, Crambites and Tortricites, London. 286 pp.

Walker, F. 1865. List of the Specimens of Lepidopterous Insects in the Collection of the British Museum, 34: 1 121 – 1 534.

中国卡拉草螟属研究及一新种和一新纪录种记述（鳞翅目，草螟科，草螟亚科）*

李卫春[1,2]　李后魂[1**]

1. 南开大学生命科学学院　天津　300071

2. 江西农业大学农学院　南昌　330045

摘　要　报道7种中国卡拉草螟属 *Culladia* 昆虫，包括新种郑氏卡拉草螟 *Culladia zhengi* sp. nov. 和中国新纪录种齿线卡拉草螟 *C. dentilinealis* Hampson, 1919。文中提供了新种和新纪录种的成虫和外生殖器图，给出了中国该属已知种的名录和检索表。研究标本保存在南开大学生命科学学院昆虫标本室。

郑氏卡拉草螟，新种 *Culladia zhengi* sp. nov.（图1，3，5）

新种的雄性与刺突卡拉草螟 *Culladia hastiferalis*（Walker, 1865）相似，但是该种抱器背基突中部有1枚小刺，阳茎无微刺状角状器；雌性外生殖器交配囊与囊导管的界限不明显且无囊突。刺突卡拉草螟抱器背基突无小刺，阳茎末端有多枚微刺状角状器；囊导管与交配囊的界限显著，且交配囊有1枚条纹状囊突。

正模 ♂，香港大帽山，海拔 700 m，2007-04-13，李后魂等采，外生殖器玻片号 LWC08414。副模：7 ♂♂，1 ♀，采集信息同正模；2 ♀♀，香港嘉道理农场，海拔 210 m，2007-04-13，2009-09-20，李后魂等采；1 ♂，广西上思平龙山，海拔 510 m，2002-04-06，郝淑莲、薛怀君采；1 ♂，海南尖峰岭，海拔 940 m，2007-06-06，张志伟、李卫春采；1 ♂，1 ♀，海南五指山，海拔 640 ~ 650 m，2007-05-15 ~ 21，张志伟、李卫春采；1 ♀，海南吊罗山，海拔 300 m，2008-08-14，胡冰冰、张利采；1 ♂，云南瑞丽珍惜植物园，海拔 1 000 m，2005-08-06，任应党采。

词源：新种种名以著名昆虫学家郑哲民教授的姓氏命名。

关键词　鳞翅目，草螟科，草螟亚科，卡拉草螟属，新种，新纪录，中国.

中图分类号　Q969.42

* 本文为祝贺郑哲民教授执教 60 周年暨 80 寿辰而作.

** 通讯作者，E-mail：lihouhun@nankai.edu.cn